



Opportunities for γ @ DØ

- γ can be extracted from B hadronic decays
- Secondary Vertex Triggers for these decays @ DØ are not feasible
 - Possible in combinations with other triggers
- The most promising B triggers at DØ are single and di-muon triggers
- Two possibilities
 - B hadronic decays tagged with muon from opposite side
 - $B \rightarrow DX$ decays with D decaying semileptonically

Chicago Flavor 5/6/2005

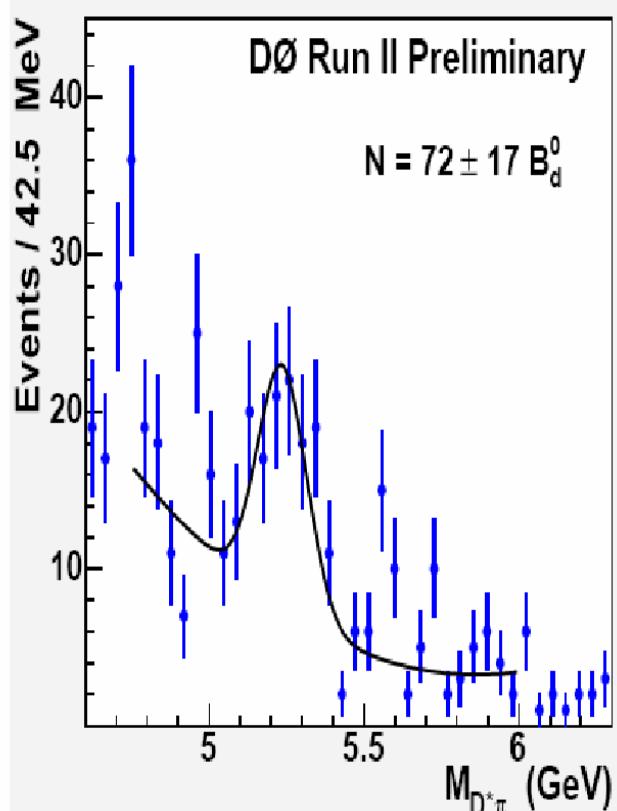
S.Burdin /FNAL/

Rick Jesik @ CKM 2005

Hadronic B_d signal

$L = 250 \text{ pb}^{-1}$

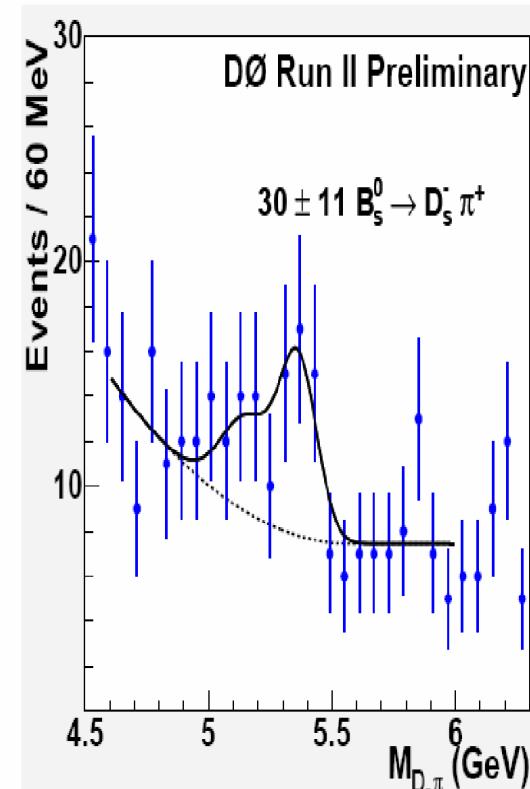
- Single muon triggers



Hadronic B_s signal

$L = 70 \text{ pb}^{-1}$

- B_s triggers
 - 5 GeV track matched muon
 - 2 tracks
 - $pT > 1.5 \text{ GeV}$
 - IP sig > 3
 - 2 tracks with invariant mass in the phi range
 - Runs unprescaled at 100E30





Semileptonic D decays

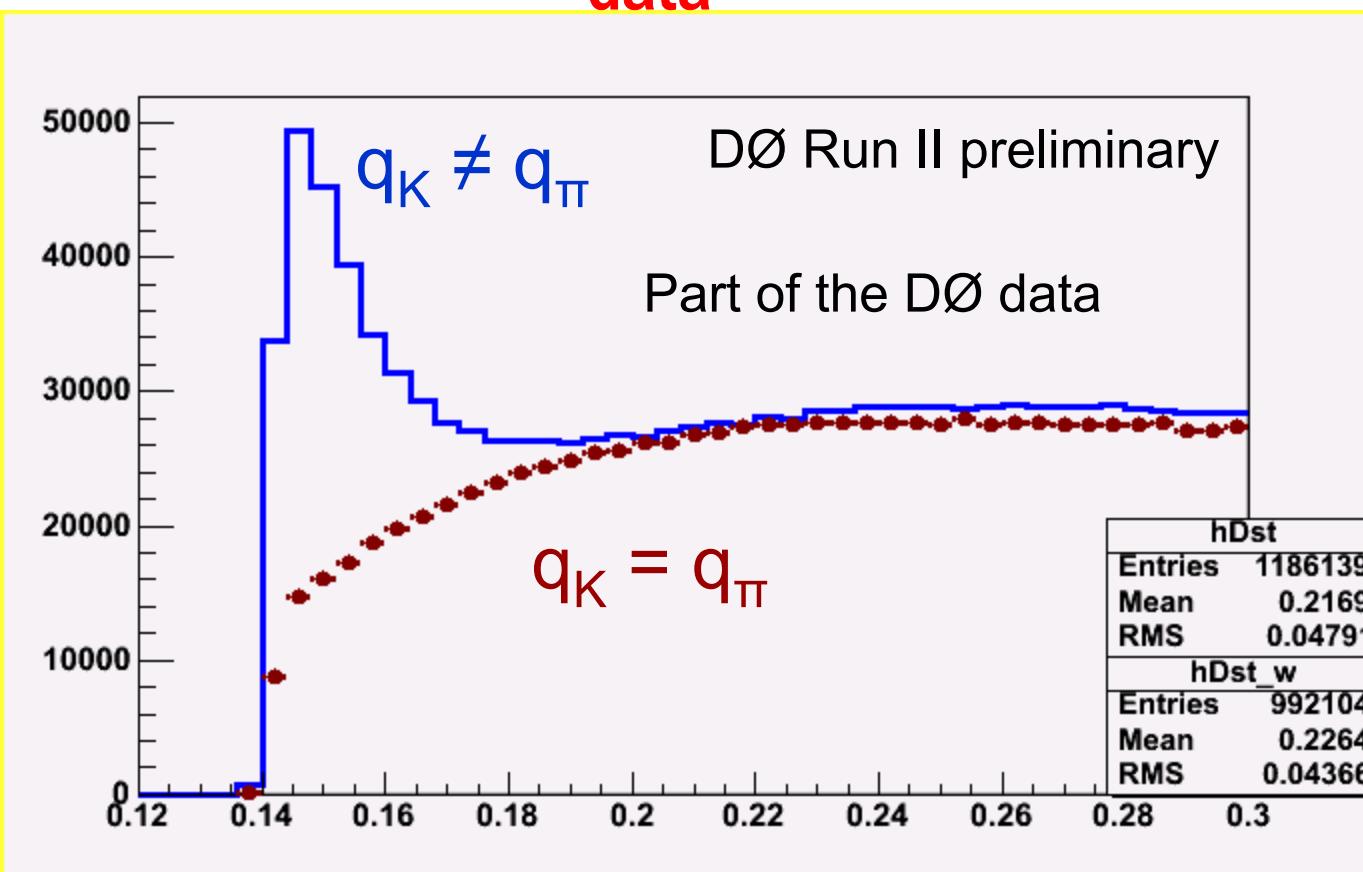
- Problem: no mass peak
- D^{*-} decays have nice feature: π_s
 - could try to reconstruct hadronic B decays with D^{*-}
 - ✓ Bd → D^{*-} π⁺
 - ✓ Bs → D^{*+} K^{*-} K_s
 - ✓ B⁺ → D₁(2420) K^{*+}

Semileptonic D^{*}- decays

$$D^{*-} \rightarrow \bar{D}^0 \pi_s^-$$

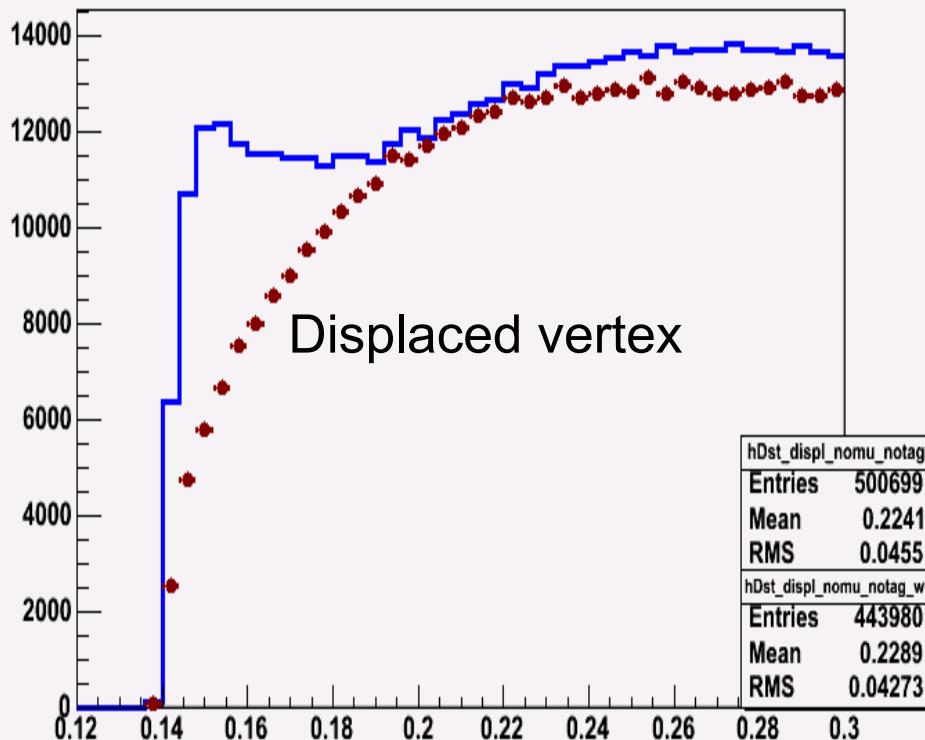
$$\bar{D}^0 \rightarrow K^+ \mu^- \bar{\nu}_\mu$$

- Partially reconstructed decays
- Mainly direct charm production
- ~150k candidates in (small) part of the DØ data

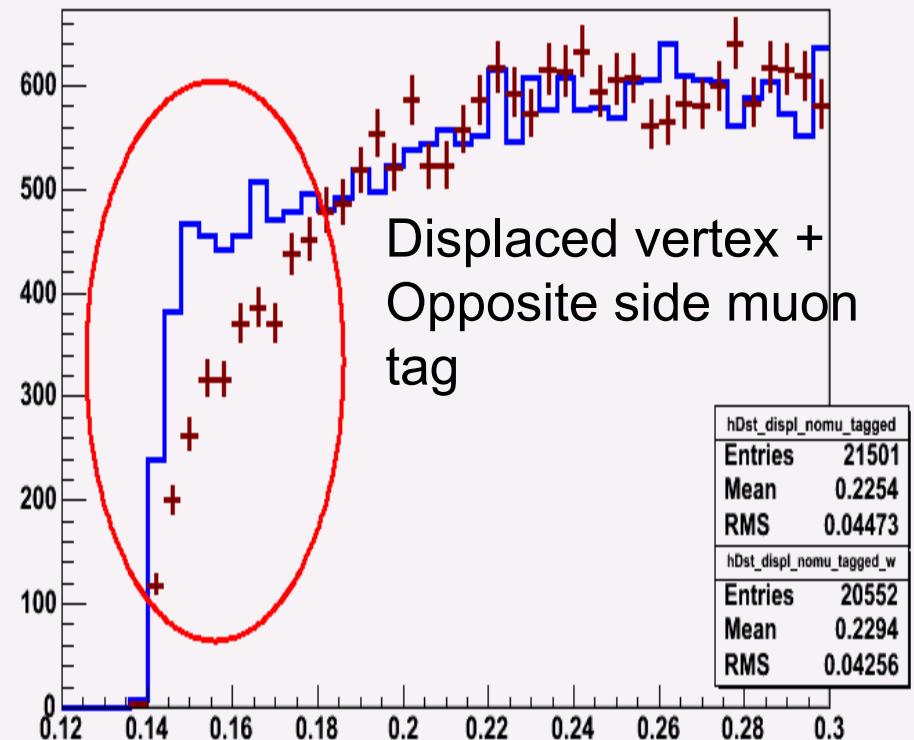


Estimate for $Bd \rightarrow D^* \pm X$ ($X \neq \mu$)

DØ Run II preliminary



DØ Run II preliminary



- Direct charm suppression
 - displaced D^* vertex



Conclusion

- Hadronic B decays with Opposite Side Muon Tagging are promising
- Semileptonic $D^{*\pm}$ decays could be added
 - Sample composition will be key issue
 - $B_s \rightarrow D^{*-} X$, where $X = K_s, K^*$, could be more clean